Part I: Write whether the statement is True or False (1pt. each)

1. A device that provides interfacing, data communication, signal processing and other low-level functionalities is called Microprocessor.
2. The goal of most big data systems is to secure data.
3. Relational database management system is not a suitable storage mechanism for big data.
4. Artificial Intelligence (AI) machine can perform a task without specifically being pre-programed to do a task.
5. Agent is anything that can perceive its environment through sensors and acts upon that environment through effectors.
6. Sensor layer of the IoT architecture is made up of smart objects integrated with sensors.
7. Interoperability of devices is one of the challenges in IoT
8. Augmented reality allows users to overlay computer- generated content in the real world whereas virtual reality (VR) is the integration of digital information with the user's environment in real-time.
9. Augmented reality helps patients to understand their conditions and describe correctly their symptoms.
10. Technology can serve to promote or restrict human rights.

Part II: Choose the correct answer from the given alternatives for the following questions (1.5 pts. each)

1. _____ regarded as the new oil and strategic asset and it drives or even determines the future of science, technology, and the economy.
   a. Information
   b. Data
   c. Knowledge
   d. Wisdom
2. Stage of industrial revolution in which Telephone and electric power introduced.
   a. IR 1.0
   b. IR 4.0
   c. IR 3.0
   d. IR 2.0
3. _____ refers to the communication and interaction between a human and a machine via a user interface.
   a. Artificial Intelligence
   b. Data Science
   c. Human to Machine Interaction
   d. Internet of Things
4. One of the following is considered as semi-structured data:
   a. Audio files
   b. XML
   c. Video Files
   d. NoSQL databases
5. The Big Data Value chain identifies the following key high-level activities?
   a. Cleaning, processing, presenting, and processing.
   b. Veracity, variability, and value.
   c. Acquisition, analysis, curation, storage, and usage.
   d. Input, processing, and output.

6. If you select one photo in your phone and see details like the type, size, location, and image captured date, this is called___
   a. a metadata
   b. an alphanumeric data
   c. a semi-structured data
   d. a unstructured data
7. _____involves exploring, transforming, and modeling data
   a. Data acquisition
   b. Data analysis
   c. Data curation
   d. Data storage
8. One of the followings is not the main goal of Artificial Intelligence. Identify
   a. Solving Knowledge intensive tasks
   b. Achieving computer-enhanced learning
   c. Building a machine which can perform tasks that requires human intelligence
   d. Replacing human intelligence.
9. Which one is at the highest level of AI maturity among the following?
   a. Situational awareness
   b. Prediction
   c. Prevention
   d. Automation
10. All are the applications of AI in agriculture, except_____.
   a. agriculture robotics
   b. AI Chat bots
   c. soil and crop monitoring
   d. predictive analysis
11. The type of AI with the ability to think, to reason, solve puzzles, make judgments, plan, learn, and communicate by its own is:
   a. Narrow AI
   b. Super AI
   c. Weak AI
   d. General AI
12. Which of the following is not an application of Augmented Reality in Education
   a. Higher engagement
   b. interactive lessons
   c. Reduce curiosity
   d. High retention
13. _____ is fully immersive, which tricks the senses into thinking one is in a different environment or world apart from the real world.
   a. Augmented Reality
   b. Virtual Reality
   c. Mixed Reality
   d. Artificial intelligence
14. Which one of the following is categorized under Mixed Reality devices?
   a. HTC Vive
   b. Microsoft HoloLens
   c. Snapchat lenses
   d. PlayStation
15. Which of the following is not the advantage of IoT?
   a. Improved Customer Engagement
   b. Technology Optimization
   c. Enhanced Data Collection
   d. The potential that a hacker could steal confidential information also increas

16. Which layer used to implement and present the results of the data processing layer to accomplish disparate uses of IoT devices?

a. Network layer
b. Sensing layer
c. Application layer
d. Motion Sensor layer

17. Which sensor is used for Smart locks, Smart lights and Home automation systems?

a. Motion sensor
b. Environmental sensor
c. Position sensor
d. Alcohol sensor

18. Which of the following general ethical principles that contributes to society and to human well-being?

a. Avoid harm
b. Be honest and trustworthy
c. Be fair and take action not to discriminate
d. All of the above

19. The code for professional ethics is not based upon following principle.

a. Integrity
b. Usability
c. Objectivity
d. Confidentiality

20. Collect the minimal amount of information necessary from individuals and businesses consistent with the Department's mission and legal requirements. This digital privacy principle is described as____.

a. Transparency
b. Accuracy
c. Security
d. Data minimization

Part III: Short answer (1pt. each)

1. _____ refers to technologies that are currently developing, or that are expected to be available within the next five to ten years.
2. List down the four enabling devices for emerging technologies.
3. List at least two characteristics of big data.
4. List two benefits of clustered computing.
5. Give two examples of an agent effectors.
6. _____ is the networking of smart objects that communicate intelligently in the presence of internet protocol.
7. List at least two challenges of Internet of Things (IoT).
8. Briefly describe the difference between Virtual Reality and Augmented Reality.
9. _____ is the protection of personally identifiable or business identifiab information that is collected from respondents through information collection activities or fro other sources.
10. List down at least two sub-related category of digital privacy.